

Appendix 4-2 Permanent and Enforceable Emissions Reductions

Synopsis of the Wisconsin Section 182 Ozone Control SIP for the Ozone Nonattainment Areas in eastern Wisconsin – 1990 through 2001.

Wisconsin has maintained a fully adopted and approved SIP addressing the mandatory emission control programs since ozone designations of nonattainment first occurred in 1979. Early state program requirements addressed the SubPart-1 requirements in the Act. These included the first three phases of reasonably available control technology (RACT) for volatile organic compounds, a major precursor of ambient ozone formation. In addition, the areas benefited from early iterations of new vehicle emission standards as the fleet slowly turned over. In 1984, Wisconsin initiated its centralized inspection and emission testing (I/M) structure for in-use vehicles. Various regulatory fixes during the 1985-1990 timeframe addressed VOC control program upgrades and deficiencies. During this period the state also pursued successful litigation that led to the development of a multi-state effort, in concert with US-EPA to address the Lake Michigan regional ozone problem. Subsequent evaluations highlighted the broad scope of the problem which is very sensitive to ozone and ozone precursor transport into and within the region.

After passage of the Clean Air Act Amendments of 1990 (CAA-90), Wisconsin nonattainment areas were designated according to classifications addressing relative air quality severity. Specific requirements came as a result of that classification. In addition, during the early 1990's, EPA pursued a volatility control program for gasoline and initiated rulemaking established a new set of vehicle emission standards. Wisconsin's responses to the CAA-90 requirements and the federal government's major control programs are noted in **Table 1** shown in order of adoption starting with the most recent. In aggregate, these efforts have led to a significant reduction in regional VOC emissions over the last decade.

By 2000, Wisconsin, in concert with Illinois and Indiana, was finally able to develop an Attainment Demonstration for 1-Hour Ozone that shows attainment of the standard by the required attainment year of 2007. A synopsis of that demonstration is contained in **Appendix 5-1**. By October, 2001 EPA had fully approved the Wisconsin Attainment SIP and all associated rate-of-progress components.

Table 1 – Wisconsin Ozone SIP Components (Section 182)
(Q/A in progress)

Year	Submittal Topic	NR Code	DNR Action	EPA Action
2001	Autobody Refinishing Operations Revision (incl. Renumbering)	406, 407, 423, 428, 439, 484, 485	Submitted 2/1/01 & 7/31/01	Final Rule 12/14/01
	1-Hour RACM Analysis		Submitted 6/6/01	Final Rule 11/13/01
	Plastic Parts Coating RACT	422, 439	Submitted 7/31/01	Final Rule 11/13/01
	I/M	485	Submitted 7/7/01 & 7/27/01	Proposed Rule 8/16/01
2000	Plastic Parts Coating RACT supplement	422, 439	Submitted Final 7/31/01	Final Rule 11/13/01
	Phase II Attainment Demonstration (deficiencies)		Submitted 2/22/00	Final Rule 11/13/01
	9% Plan Supplement		Submitted 3/3/00	Final Rule 11/13/01
	1-Hour Ozone Attainment SIP (“Final”)*		Submitted 12/27/00	Final Rule 11/13/01
	* NOx emission rules (stationary)	428		Final Rule 11/13/01
	* Industrial Cleanup RACT	423		Final Rule 11/13/01
	* Excess VOC Emissions Fee Rule	410		Proposed Rule 3/6/02
	* I/M Changes	485		Final Rule 8/16/01
	* NOx cutpoints for I/M	N/A		Final Rule 8/16/01
	* On-Board Diagnostics	N/A		Final Rule 8/16/01
	Adopting EPA 204 Series of Capture Efficiency Test	439	Submitted 8/15/00	(no record??)
	Walworth Maintenance Plan revision		Submitted 9/8/00	Final Rule 10/26/00
	Non-CTG RACT, Flint Ink	Admin. Order	Submitted 10/30/00	None required
1999	Deficiencies submittal, Mid-course correction	N/A		Final Rule 11/13/01
	Clean Fuel Fleets (program delay)	487	Submitted 5/6/99	None required
	Maint. Plans: Kewaunee, Sheboygan, Walworth	N/A	Submitted 2/22/00	Final Rule 11/13/01
	Withdrawal Contingency Measures: Kewaunee,	N/A	Submitted 2/22/00	Final Rule 11/13/01
1998	1-Hour Attainment SIP (“Phase 2 – Severe”)		Submitted 4/30/98	Final Rule 11/13/01
	* Full attainment demonstration			
	* Motor Vehicle Emission Budgets			
	Enhancement to I/M program	485		Final Rule 8/16/01
	Severe NAA SIP (Attainment Demonstration)	N/A	Commitment to EPA	Final Rule 11/13/01
	Transportation Conformity		Submitted 6/23/98	Final Rule 11/13/01
	I/M Cutpoint revision to 11/15/92 submittal	485	Submitted 12/30/98	Final Rule 8/16/01

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Year	Submittal Topic	NR Code	DNR Action	EPA Action
1997	Compliance Demonstr. Milestone for 15% SIP		Letter 5/2/97	Not a SIP revision
	9% Rate of Progress Plan	See below	Submitted 12/11/97	Final Rule 11/13/01
	* Fed Tier 1	N/A	N/A	
	* RFG	N/A	N/A	
	* I/M	485		Final Rule 8/16/01
	* Fed Gas Detergent Additives	N/A	N/A	
	* Wood Furniture Coatings	422		Final Rule 4/4/96
	* Misc. wood parts and products	422, 439, 484		Final Rule 6/30/95
	* Yeast Manufacturing	424, 439	Permit condition	Final Rule 6/30/95
	* Screen Printing	422, 439		Final Rule 7/28/95
	* Gray Iron & Steel Foundries	419		Final Rule 2/13/96
	* Industrial Adhesives	422		Final Rule 4/25/96
	* Lithographic Printing	422		Final Rule 4/9/96
	* Degreasing	423.03		Final Rule 4/29/96
	* Asphalt BACT	NR 445	Operating Permit (Industry)	N/A
	* LAER at gas storage facilities	N/A	N/A	N/A
	* LAER medical waste incinerators	N/A	N/A	N/A
	* TSDF MACT	N/A	N/A	N/A
	* WI Partners (replace ECO)	N/A	Voluntary measure	N/A
	* Fed AIM coatings	N/A	N/A	N/A
	* Autobody Refinishing	422		Final Rule 2/12/96
	* Stage 2 Vapor Recovery	420		Final Rule 8/13/93
	* Fed Onboard vapor recovery canisters	N/A	N/A	N/A
	* Traffic Markings	422		Final Rule 4/29/96
	* Underground Gas tank vent valves	420		Final Rule 4/29/96
	* Fed Consumer/Commercial Products	N/A	N/A	N/A
	* RFG (area)	N/A	N/A	N/A
	* RFG (off-road)	N/A	N/A	N/A
	* Fed Off-road Engine standards	N/A	N/A	N/A
	Transportation Conformity MOA Supplement	N/A	Submitted 2/20/97	Inactive
	I/M Supplement	485	Submitted 7/3/97	Final Rule 8/16/01
	ROP & Attainment Demonstration revision	N/A	Submitted 12/11/97	Final Rule 11/13/01
1996	NOx Exemption for Transportation Conformity	N/A	Submitted 7/10/96	Final Rule 2/3/98
	Industrial Cleanup Solvents	423 (renumbered)	Submitted 1/19/96	Final Rule 4/29/96
	Traffic Markings	422 (renumbered)	Submitted 2/2/96	Final Rule 4/29/96
	Phase 1 modeling Demonstration Attainment	N/A	Submitted 2/2/96	Final Rule 11/13/01
	Redesignation (Walworth, Kewaunee, Manitowoc, Sheboygan)	N/A	Subm. Walworth 12/15/95 Kew. Man, Sheb: 5/15/96	Final Rule 8/26/96; minus Manitowoc
	Enhanced I/M	485	Submitted 2/13/96	Final Rule 8/16/01
	ROP & Attainment Demonstration revisions	N/A	Subm. 5/24/96 & 10/18/96	Final 11/13/01
	General Electric Medical Systems	432	Submitted 3/15/96	Final Rule 7/17/96
1995	Clean Fuel Fleets Revision	487	Submitted 6/7/95	Final Rule 3/11/96
	Attainment Demonstr. Ph.1 model commitment		Submitted 5/15/94	Final Rule 11/13/01
	Fed RFG 3 moderate counties (Class C)	N/A	Contingency provision	N/A
	Plastic Parts Coatings	422, 439	Submitted 7/31/01	Final Rule 11/13/01
	RFG 9 counties (Class B)	N/A	Contingency provision	N/A
	Transportation Conformity Supplement	N/A	Submitted 6/9/95	Final Rule 8/27/96
	Milwaukee area VMT offset program (3 elements)	N/A		Final Rule 5/5/95 (Elem. 1) Final Rule 9/11/95 (Elem. 2)
	ROP & Contingency Plan supplements	N/A	Submitted 7/13/95	Final Rule 3/21/96
	Wood Door Ctg & Molded Wood Parts/Product	422, 439, 484	Submitted 2/15/95	Final Rule 6/30/95
	Industrial Cleanup Solvents supplement	423, 425	Submitted 12/7/95	Final Rule 4/29/96
	Walworth Redesignation request/Maint. Pla	N/A	Submitted 12/15/95	Final Rule 8/26/96

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Year	Submittal Topic	NR Code	DNR Action	EPA Action
1994	Attainment Demonstration		Submitted 11/15/94	Final Rule 11/13/01 (severe) Final Rule 8/26/96 (Moder)
	Major source non-CTG RACT		Submitted 6/30/94	Final Rule 4/29/96
	* Yeast Manufacturing	424, 439	Submitted 7/11/94	Final Rule 4/29/96
	* Screen Printing	422, 439	Submitted 7/11/94	Final Rule 4/29/96
	* Iron and Steel Foundries	419	Submitted 7/11/94	Final Rule 4/29/96
	* Wood Door Ctg & Molded Wood Parts/Product	422, 439, 484	Submitted 7/11/94	Final Rule 4/29/96
	Contingency Plans (w/15% Plan)	N/A	Submitted 11/15/94	Final Rule 3/21/96
	Post-1996 ROP Plan (w/9% ROP)		Submitted 11/16/94	Final Rule 11/13/01
	Petition to suspend further ROP req' ments for Moderate NAA (Redesig. for Kew & Sheb)		Submitted 11/16/94	Final Rule 8/26/96
	Clean Fuel Fleets	487	Submitted 5/12/94	Final Rule 3/11/96
	NOx Waiver	N/A	Submitted 7/13/94	Final Rule 11/13/01
	I/M	N/A	Submitted 7/28/94	Final Rule 8/16/01
	General Conformity	489	Subm. 11/30/94 & 10/18/95	Final Rule 7/29/96
	6 Severe County NAA		Submitted 7/11/94	Final Rule 11/13/01
	Transportation Conformity	N/A	Submitted 11/23/94	Final Rule 8/27/96
1993	15% Plan	See below	Submitted 11/15/94	Final rule 3/21/96
	* Autobody Refinishing	421, 422, 423	Subm. 6/14/95 & 2/2/96	Final Rule 2/12/96
	* Industrial Cleanup Solvents	423, 425	Subm. 4/12/95 & 6/14/95	Final Rule 4/29/96
	* Employee Trip Reduction	486	Submitted 11/15/93	N/A
	* Fed AIM	N/A	N/A	N/A
	* Fed Detergent Additives In Gas	N/A	N/A	N/A
	* Fed non-road engine standards	N/A	N/A	N/A
	* Fed RFG, 6 counties	N/A	N/A	N/A
	* Full I/M Enhancement, 6 counties	485	Rule: 2/17/95	Final Rule 8/16/01
	* Gas station tank breathing	420	Subm. 2/17/95 & 6/14/95	Final Rule 4/29/96?
	* Industrial Adhesives	422	Subm. 12/11/95 & 1/12/96	Final Rule 2/13/96
	* I/M Expansion (Sheboygan)	485	Rule: 6/14/95	Final rule 8/16/01
	* Lithographic Printing	422, 439, 484	Subm. 6/14/95 & 11/14/95	Final Rule 4/9/96
	* Non-CTG RACT:		Submitted 2/15/95	
	Misc. Wood Products Coatings	422, 424, 439	Submitted 7/11/94	Final Rule 4/4/96
	Yeast Manufacturing	424, 439	Submitted 7/11/94	Final Rule 6/30/95
	Screen Printing	422, 439	Submitted 7/11/94	Final Rule 7/28/95
	Foundries	419	Submitted 7/11/94	Final Rule 2/13/96
	* RFG Expansion, 3 moderate Counties	N/A	N/A	N/A
	* Stage 2 Vapor Recovery	420, 425, 439, 484, 494	Subm 11/15/92 & 3/29/93	Final Rule 8/13/93
	* Tier 1 Tailpipe & Evap. Emissions	N/A	N/A	N/A
	* Traffic Markings	422	Subm. 6/14/95 & 1/19/96	Final Rule 4/29/96
	* Wood Furniture Coatings	422	Submitted 6/14/95	Final Rule 4/9/96
	Base Year Emission Inventories	N/A	Submitted 1/15/93; 7/21/93 & 12/10/93	Final Rule 6/15/94
	VMT Emissions Projections 2007: Severe NAA	N/A	Submitted 11/15/93	Final Rule 11/13/01 Final Rule 5/5/95 (Elem. 1) Final Rule 9/11/95 (Elem. 2)
1992	Enhanced I/M	485	Submitted 11/15/92	Final Rule 8/16/01
	Emissions Statement	438	Submitted 11/13/92	Final Rule 12/6/93
Pre-1990 CAA	RACT I-III	NR 400 Series		Final Rules 9/27/95; 8/15/94 & 2/15/94
	National RVP (9.0 Summer Grade)	N/A	None	N/A
	I/M Program (Basic prior to CAA90)	485		Final Rule 8/16/01

* N/A means not applicable

Permanent and Enforceable Emissions Reductions

Permanent and enforceable emissions reductions of volatile organic compounds (VOCs) have been generated between 1990 and 1999 due to a variety of measures (see **Tables 2, 4, 5 and 6**) and have significantly contributed to the attainment of the ozone standard. All permanent and enforceable emissions reductions discussed are VOC reductions. These reductions are divided into four sectors in order of decreasing magnitude of permanent and enforceable VOC emissions reductions: highway mobile sources, area sources, non-road mobile sources and point sources.

1. Highway Mobile Sources

The largest permanent and enforceable emissions reductions are generated by this sector. Measures impacting highway mobile sources include federal "Tier 0" vehicle standards, 1992 gasoline Reid vapor pressure (RVP) change, federal "Tier 1" vehicle standards, phase 1 reformulated gasoline (RFG) and enhanced vehicle inspection and maintenance (IM). The permanent and enforceable VOC emissions reductions from these measures are presented in **Table 2**. The measures having the largest impact are compared to 1990 VOC emissions in **Table 3**.

U.S. EPA's MOBILE5a model was used to calculate the emissions and reductions. The "1990-1999 Growth" includes both increases in vehicle-miles of travel (VMT) and changes to the fleet distribution (e.g., more light-duty trucks instead of passenger cars). Since a motor vehicle's emissions could be affected by several of the five listed control measures, the order in which the measures are quantified will affect the amount of reductions attributable to each individual measure. The order used in this evaluation was: (1) "Tier 0", (2) 1992 RVP change, (3) "Tier 1" and (4) RFG and enhanced IM combined. The combined RFG/IM reduction was then allocated to each of these two measures by calculating the reduction of each with and without the other and then averaging the results.

The MOBILE5a input file and spreadsheets used to calculate these emissions and reductions are presented in **Appendix 4-3**.

2. Area Sources

Measures affecting area sources include VOC Reasonably Available Control Technology (RACT) rules; federal architectural, industrial and maintenance (AIM) coatings rule; federal commercial and consumer solvents rule; Stage II vapor recovery; and gasoline station tank breathing controls. Unquantifiable and unenforceable changes in VOC emissions occur due to reporting changes, activity changes and growth. They constitute the difference between the net emissions reductions and the permanent and enforceable emissions reductions. Permanent and enforceable emissions reductions from AIM coatings, automobile refinishing, stage II vapor recovery, traffic markings, gasoline station tank breathing and commercial and consumer products are determined by comparing 1999 uncontrolled emissions and 1999 controlled emissions for these source categories. Permanent and enforceable VOC emissions reductions and their associated measures are listed in **Table 4**.

3. Non-Road Mobile Sources

Measures impacting non-road mobile sources include reformulated gasoline and federal non-road engine standards. Unquantifiable and unenforceable changes in VOC emissions occur due to reporting changes, activity changes and growth. They constitute the difference between the net emissions reductions and the permanent and enforceable emissions reductions. Permanent and enforceable emissions reductions from reformulated gasoline are taken from the Wisconsin 15% ROP plan. Permanent and enforceable emissions reductions from federal non-road engine standards are determined by comparing 1999 uncontrolled emissions and 1999 controlled emissions for these source categories. There aren't any permanent and enforceable emissions reductions from recreational marine, commercial marine, locomotive or aircraft source categories.

Permanent and enforceable VOC emissions reductions and their associated measures are listed in **Table 5**.

4. Point Sources

Measures impacting point sources include VOC RACT rules and an administrative order for an ink manufacturer. Unquantifiable and unenforceable changes in VOC emissions occur due to reporting changes, activity changes and growth. They constitute the difference between the net emissions reductions and the permanent and enforceable emissions reductions. Permanent and enforceable emissions reductions from wood furniture coating, miscellaneous wood product coating, yeast manufacturing, screen printing controls, foundries-grey iron and steel, industrial adhesives and lithography are taken from the Wisconsin 15% Rate of Progress (ROP) plan and apportioned by county populations. Permanent and enforceable emissions reductions from yeast manufacturing occur only in Milwaukee county. Permanent and enforceable degreasing emissions reductions from the Wisconsin 15% ROP plan are two tons per ozone season day. Due to further impact of the solvent cleaning metal rules in *Chapter NR 423: Control of Organic Compound Emissions from Solvent Cleaning Operations* of the *Wisconsin Administrative Code*, permanent and enforceable emissions reductions estimates have been increased to 2.5 tons per ozone season day. Permanent and enforceable emissions reductions from ink manufacturing occur at a single source in Milwaukee county. Plastic parts coating and industrial clean up solvents permanent and enforceable emissions reductions are unknown, but estimated to be insignificantly small. Permanent and enforceable VOC emissions reductions and their associated measures are listed in **Table 6**.

Table 2: 1990-1999 Permanent and Enforceable VOC Emissions Reductions for the Highway Mobile Sector

Emissions in Tons per Summer Weekday						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6 –County Area	Totals
1990 Emissions	2.59	1.48	8.07	9.95	139.25	161.34
1999 Emissions	1.82	0.96	5.08	4.59	51.59	64.04
Net emissions reductions	0.77	0.52	2.99	5.36	87.66	97.30
Emissions Reductions in Tons per Summer Weekday						
Measures	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6 –County Area	Totals
1990-1999 Growth	-0.91	-0.49	-2.46	-3.06	-30.77	-37.69
Federal "Tier 0" vehicle standards	1.02	0.59	3.30	3.99	47.10	56.00
1992 Gasoline RVP change	0.59	0.38	1.94	2.45	36.64	42.00
Federal "Tier 1" vehicle standards	0.07	0.04	0.21	0.26	4.07	4.65
Reformulated gasoline (Phase 1)	-	-	-	-	12.04	12.04
Enhanced vehicle inspection and maintenance	-	-	-	1.72	18.58	20.30
Net emissions reductions	0.77	0.52	2.99	5.36	87.66	97.30

Table 3: Comparison of Highway Mobile Source Measures with the Greatest Permanent and Enforceable VOC Emission Reductions to 1990 VOC Emissions from All Sectors

Emissions from All Sectors in Tons per Ozone Season Day						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 Emissions	12.44	4.89	20.34	29.48	351.71	418.86
Emissions Reductions in Tons per Ozone Season Day						
Measures	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
Federal "Tier 0" vehicle standards	1.02	0.59	3.30	3.99	47.10	56.00
1992 Gasoline RVP change	0.59	0.38	1.94	2.45	36.64	42.00
Reformulated gasoline (Phase 1)	0.00	0.00	0.00	0.00	12.04	12.04
Enhanced vehicle inspection and maintenance	0.00	0.00	0.00	1.72	18.58	20.30
Totals	1.61	0.97	5.24	8.16	114.36	130.34
Emissions Reductions in Percentages of 1990 Emissions						
Measures	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
Federal "Tier 0" vehicle standards	8.20%	12.07%	16.23%	13.53%	13.39%	13.37%
1992 Gasoline RVP change	4.74%	7.77%	9.54%	8.31%	10.42%	10.03%
Reformulated gasoline (Phase 1)	0.00%	0.00%	0.00%	0.00%	3.42%	2.87%
Enhanced vehicle inspection and maintenance	0.00%	0.00%	0.00%	5.83%	5.28%	4.85%
Totals	12.94%	19.84%	25.77%	27.68%	32.52%	31.12%

Table 4: 1990-1999 Permanent and Enforceable VOC Emissions Reductions for the Area Source Sector

Emissions in Tons per Ozone Season Day						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 Emissions	5.70	1.79	8.85	9.73	132.22	158.29
1999 Emissions	2.39	1.13	5.87	6.80	95.03	111.21
Net emissions reductions	3.32	0.66	2.98	2.94	37.19	47.08
Emissions Reductions in Tons per Ozone Season Day						
Measures	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 – 1999 Unquantifiable and unenforceable changes	3.13	0.40	1.73	1.38	9.21	15.85
AIM coatings	0.03	0.03	0.10	0.14	2.28	2.59
Autobody refinishing	-	0.02	0.29	0.30	8.38	8.99
Stage II vapor recovery	-	0.10	0.42	0.53	8.03	9.08
Traffic markings	0.05	0.04	0.16	0.22	3.61	4.09
Gasoline station tank breathing	0.04	0.02	0.09	0.12	1.75	2.02
Consumer and commercial products	0.06	0.04	0.18	0.24	3.93	4.45
Net emissions reductions	3.32	0.66	2.98	2.94	37.19	47.08

Table 5: 1990-1999 Permanent and Enforceable VOC Emissions Reductions for the Non-Road Mobile Sector

Emissions in Tons per Ozone Season Day						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 Emissions	4.15	0.76	2.26	3.06	39.86	50.09
1999 Emissions	4.41	0.80	2.34	3.28	39.88	50.70
Net emissions reductions	-0.26	-0.03	-0.08	-0.21	-0.02	-0.61
Emissions Reductions in Tons per Ozone Season Day						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 – 1999 Unquantifiable and unenforceable changes	-0.36	-0.11	-0.40	-0.57	-8.80	-10.24
Reformulated gasoline (non-road)	-	-	-	-	2.00	2.00
Federal non-road engine standards	0.10	0.07	0.31	0.36	6.78	7.62
Net emissions reductions	-0.26	-0.03	-0.08	-0.21	-0.02	-0.61

Table 6: 1990-1999 Permanent and Enforceable VOC Emissions Reductions for the Point Source Sector

Emissions in Tons per Ozone Season Day						
	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 Emissions	0.00	0.86	1.16	6.74	40.38	49.14
1999 Emissions	0.14	0.59	1.92	2.92	19.82	25.40
Net emissions reductions	-0.14	0.27	-0.76	3.82	20.56	23.74
Emissions Reductions in Tons per Ozone Season Day						
Measures	Door County	Kewaunee County	Manitowoc County	Sheboygan County	6-County Area	Totals
1990 - 1999 Unquantifiable and unenforceable changes	-0.14	0.21	-1.02	3.47	13.96	16.47
Wood furniture coating	-	0.02	0.08	0.11	1.79	2.00
Misc. wood product coating	-	0.01	0.04	0.05	0.81	0.90
Yeast manufacturing	-	-	-	-	0.70	0.70
Screen printing	-	0.00	0.00	0.01	0.11	0.12
Foundries-gray iron and steel	-	-	-	-	0.06	0.06
Industrial adhesives	-	0.00	0.02	0.03	0.45	0.50
Lithography	-	0.00	0.02	0.02	0.36	0.40
Plastic parts coating	-	-	-	-	-	-
Degreasing	-	0.02	0.10	0.14	2.24	2.50
Industrial clean up solvents	-	-	-	-	-	-
Ink manufacturing	-	-	-	-	0.09	0.09
Net emissions reductions	-0.14	0.27	-0.76	3.82	20.56	23.74